HUMAN CAPITAL DEVELOPMENT, INSTITUTIONAL QUALITY, AND GROSS DOMESTIC PRODUCT PER CAPITA: EVIDENCE FROM NIGERIA

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ABSTRACT
This study examines the impact of human capital development, proxied by government expenditures on education and health, and institutional quality on GDP per capita, a common proxy for poverty, in Nigeria for the period, 1989 to 2022. The study utilised secondary data sourced from the World Bank, Central Bank of Nigeria and the National Bureau of Statistics. Autoregressive distributed lag (ARDL) was employed with result showing a positive significant effect of Government Expenditure on Education on GDP per capita whereas Government Expenditure on Health brought about a significant negative effect during the years of the study. Further findings showed institutional quality demonstrating a negative and significant effect on GDP per capita. The study recommended significantly larger government spending on education and health while necessary systemic government policies be implemented to boost Nigeria's institutional quality significantly.

Keywords: Government Expenditure on Education, Government Expenditure on Health, Institutional quality, GDP per capita.

JEL Codes: E62, H51, H52

1. INTRODUCTION:

This study examines an important research issue on the impact of human capital development on poverty trends in Nigeria. As is common in economic literature, the study is utilizing Government Expenditures on Education and Health as proxy for human capital development and GDP per capita, a common denominator for poverty. Numerous economic studies and reports (among which are World Bank 2014, Dollar et al 2016, Bannister and Moumouras 2018, Nolan et al 2019, Loayza and Pennings 2020, Mansi et al 2020, Amar and Pratama 2020) have found a strong association between national per capita income and national poverty indicators though debate continues in economic literature on the suitability of GDP per capita as a proper representation of human welfare.

Poverty is a major problem of deprivation and low human welfare, whose incidence and debilitating consequences have ravaged society for long. The issue of poverty and inequality is one of the biggest global economic challenges facing humanity today (World Bank, 2022).

Poverty is particularly endemic in Africa and parts of the developing world. (World Bank 2020). The World Bank Poverty and Shared Prosperity Report (2020) submits that half of Sub-Saharan Africa has a poverty rate above 35 per cent of the population, and 18 of the 20 poorest countries in the world are in Sub-Saharan Africa. The same report pronounced that as poverty is reducing in the rest of the world, it is increasing in Africa, at least in absolute number terms.

While the poverty rate has decreased from 56% in 1990 to 40% in 2018, more countries in Sub-Saharan Africa are falling into poverty. In other words, the poverty rate is falling slowly in sub-Saharan Africa while the population is growing faster than the decline in poverty rate. To this end, 433 million Africans were estimated to live in extreme poverty in 2018, rising from 284 million in 1990 (World Bank 2020). For the reference year 2019 (September 2023 Vintage), the World Bank report put the poverty rate in Sub-Saharan Africa at 35.4% and the number of extremely poor at 397.4 million.

The IMF (2001) posited that economic growth is the single most important factor influencing poverty. Nigeria's economy recorded broad based and sustained growth of over 7 percent annually on the average between years 2000 and 2014. The poverty rate at the international poverty line thus decreased from 48 percent in 2003 to 32 percent in 2015, implying a decrease of 4.4 million in the number of poor people. In the period 2015 to 2022 however, economic policy missteps, external shocks and Covid 19 contributed to a slump in the growth trajectory to an average of 1.4 percent (-1.1percent in per-capita terms) in the period. Poverty rate is now estimated to have reached 38.9 percent in 2023 with an estimated 87 million Nigerians living below the international poverty line, the world's second largest poor population, after India (World Bank 2023). Nigeria is experiencing shrinking prosperity and its poverty situation has reached a critical juncture, with Gross Domestic Product (GDP) per capita plunging 75 per cent from $3,222.7 in 2014 to $806.84 in April 2025. Nigeria's GDP per capita has been overtaken by Sierra Leone ($915.81) and alarmingly close to Somalia's ($766.01) (IMF World Economic Outlook, 2025). According to the Multidimensional Poverty Index report of the National Bureau of Statistics for 2022, 63% of persons living within Nigeria (133 million people) are multidimensionally poor.

Dollar et al (2016) posited that absolute poverty has fallen sharply in the developing world over the past three decades. The percentage of the global population living below the World Bank's $1.25/day poverty line fell from 52 percent in 1980 to 42 percent in 1990 and to 21 percent in 2010. Much of this reduction has been due to rapid growth in large and initially poor developing countries such as China and India. But in all regions of the world, rapid growth has been systematically associated with sharp declines in absolute poverty. Loayza and Pennings (2020) also argued, from their broad cross country panel data covering low and medium countries across the globe, that growth in GDP per capita is strongly associated with poverty reduction and the elasticity of poverty with respect to growth is found to be around -2, meaning that a 1% increase in GDP per capita would engender a 2% reduction in poverty headcount ratios across the countries though the figures can vary significantly among the countries.

A country's competitiveness in the 21st century is strongly connected to the quality of its human capital. Hence, human capital development is undoubtedly the pivot for any meaningful programme of economic and educational development of Nigeria and indeed of any country (Ejere 2011). Todaro & Smith (2006), stated that public expenditure on health and education is the major constituent of human capital development which play active role in improving human knowledge and decrease the number of deaths. Reinforcing the same opinion, Chijioke and Amadi (2019) argued that countries all over the world are looking for sustainable economic development which is mostly achieved through adequate management of human and natural resources. In a bid to promote economic growth, countries try as much as possible to develop their labour through improved educational and health conditions.

Since 2015, the United Nations Education, Scientific and Cultural Organisation (UNESCO) member States agreed on a level of educational funding of 4 to 6% of GDP or 15 to 20% of annual fiscal expenditure, but the majority of countries have not yet reached this threshold. For the period, 1960-2023, the average allocation made to the education and health sectors of Nigeria was about 5.94% and 4.2% of national budget respectively which were significantly less than the UNESCO's recommended benchmarks (Ohaegbulem and Chijioke 2023). In the two decades, 2000-2019, Nigeria's public health expenditure as a share of GDP was also low at 0.65%, considerably less than the 4-5 percent of GDP suggested for achieving universal health coverage (Awoyemi et al, 2023). Due to poor funding of education and healthcare, the World Bank (2023) opines that a child born in Nigeria after 2020 will only be 36 percent as productive as its counterparts from other countries with better education and healthcare when they grow up. This is lower than the Sub Saharan African average.
As revealed by the UNESCO Global Education Monitoring (GEM) Report 2022, the most recent report, Nigeria recorded 19.7 million out-of-school children out of the total global figure of 245 million children in that year. Nigeria thus produced the third largest global figure of out-of-school children, coming after India (56.4 million) and Pakistan (20.7 million).

Empirical growth literature reports conflicting results on the relationship between public spending and long-run economic growth. Khan et al (2020) found that the nature of relationship between the two variables depends upon the institutional quality of a country. Macroeconomic stability, oftentimes a reflection of institutional quality, is the cornerstone of any successful effort to boost private investment and economic growth. Macroeconomic stability depends on the macroeconomic management of the economy and also on the structure of key markets and sectors (IMF, 2001).

Emmanuel et al (2024) opined that the average institutional quality in Nigeria has been declining and Nigeria has had a low performance in the World Governance Indicators over the time, with largely negative scores in terms of upholding the rule of law, preventing corruption, and other variables analysed. Poor institutional quality reduces human capital, discourage investors, and the multiplier effects transmit into low productivity and low private investment, which translate into poor economic performance (Khan&Naeem, 2020). With the demonstrable importance of institutional quality or governance to the effectiveness or otherwise of economic policy, this study will pay attention to its relevance, within the Nigerian context, specifically, its impact on the relationship between government expenditure and GDP per capita. While theoretical literature seems agreed on the positive influence of human capital development on economic development, empirical literature is replete with disparate findings on the relationships across time and geography.

Resultant from the above are the following questions: what is the effect of human capital development, represented by government expenditures on education and health on gross domestic product per capita in Nigeria? And what is the mediating role of institutional quality in that relationship between government expenditures on human capital development and gross domestic product per capita in Nigeria? Empirical study to find credible answers to these questions would be appropriate, and that is what this study is set to do, investigate the impact of human capital government expenditures on education and health on gross domestic product per capita in Nigeria while also examining the influence of institutional quality on the relationships.

2. LITERATURE REVIEW

2.1. Conceptual Review:

2.1.1: Human Capital Development

Human capital development presupposes investments, activities, and processes that facilitate the generation of technical and expert knowledge; skills, health or values that are embodied in people. It implies maintaining an appropriate balance and key massive human resource base and providing an encouraging environment for all individuals to be fully engaged and contribute to organizational or national goals (Schultz, 1961 and Becker, 1964). Human capital can thus be divided into three key components: health, education and experience/training; and its stock could increase through better education, higher health status and new learning (Ogundari and Awokuse, 2018).

Investment in education and health enhances human capital development in developing countries like Nigeria. The critical elements of human capital development are built on investments in education and health. Investment in education create new skills, knowledge and experience which stimulate economic growth through making individuals more proficient and more productive (Bassey et al 2023). Eggoh et al, 2015 similarly argued that investing in education and health has become indispensable social priorities in recent years as human capital accumulation has become a fundamental cause of economic performance owing to efficiency while Chijioke and Amadi (2019) posit that human capital development is necessary for national development to occur since knowledge is one of the key factors for the development and progress of each of the world economies.

2.1.2: Government Expenditure

Government expenditure includes all government spending or payments, usually on salaries and the acquisition or provision of goods and services to itself and to the society. Government spending is a major component of the national income (Dudzevičiūtė et al, 2018). The effect of government expenditures on education and health have been a subject of keen interest among policy makers and economic researchers (Ashraf et al 2023. Astuti and Prabowo 2021). Understanding the nexus between Government expenditures on education and health and economic performance and poverty progressions is critically important to Nigeria and other African countries for their large populations and growing poverty indices.

This study aims to investigate the effect of government expenditures on education and healthcare on GDP per capita in Nigeria and the effect of institutional quality on the relationship.

2.1.3 Institutional Quality:

The term institutional quality is often used interchangeably with governance (Poniatowicz et al 2020). One of the most popular definitions of governance was proposed by Kaufmann et al (1999) when they described it as the traditions and institutions that determine how authority is exercised in a particular country.

Institutional quality has to do with the proper, competent and transparent running and regulation of society, including the means of production. Kaufmann et al (2000), Nawaz et al (2014), Ali et al (2018), Nguyen et al (2018), Adegboye et al (2020), World Bank (2024), further posited that good governance is strongly correlated with growth momentum and better development. They also found a large causal effect running from improved governance to better development outcomes.

The Worldwide Governance Indicators (WGI) is a World Bank project that reports aggregate and individual governance indicators for over 200 countries and territories annually from 1996.

It considers six dimensions of governance: Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption.

2.1.4 GDP Per Capita:

The World Bank (2025) defines GDP per capita of a country as the Gross Domestic Product (GDP) of the country divided by its mid-year population. Mansi et al (2020) posited that GDP per capita is an important factor in the elimination of poverty and the improvement of the living conditions and the investment environment for the growth and development of the economy. The poor fare better in countries experiencing faster growth, even if income distribution deteriorates slightly. Countries which have experienced rapid economic growth over the last thirty years, such as Hong Kong, Korea, Malaysia, and Indonesia, have seen the per capita income of the bottom 20% and 40% of the population grow significantly (Mulok et al 2012, World Bank 2022). Mulok et al (2012) and Amar and Pratama (2020) further argued that income growth per capita is the main source of reduction in poverty in most countries while Dollar and Kraay (2016) showed data from over 70 countries supporting the view that high growth rates of real gross domestic product (GDP) per capita are associated with a more rapid reduction in poverty.

IMF (2000), Dedecek and Dudzich (2022) and Yusuf et al (2023) argued that GDP growth may be indispensable to poverty reduction or higher standard of living, it cannot stand alone as a reliable explanation for poverty reduction. Explained differently, economic growth alone is not sufficient for poverty reduction while Bannister and Moumouras (2018) opined that, as imperfect as it is, per capita income or GDP does capture the main component of well-being, and policies that improve the efficiency of production and contribute to income will continue to be important in promoting welfare. Nolan et al (2019) also recognised the evolution of GDP per head as being widely taken to be the central indicator of a country's economic performance and success in improving living standards over time. This remains the case despite increasing recognition of its limitations in those terms, as brought out comprehensively in the Stiglitz-Sen-Fitoussi Report (2009), and on-going efforts to address those limitations by national statistics offices and the UN, OECD and EU.

Nigeria has experienced slow economic growth between 2015 and 2022 and real GDP per capita has fallen drastically in the period too, driven by policy missteps and economic shocks. Poverty and hardship have risen commensurately following the years of slow growth and high inflation (World Bank, 2024)

2.2 Theoretical Review

This theoretical review aims to highlight and discuss the economic theory selected as the theoretical foundation of the thesis.

2.2.1 Human Capital Theory

Shultz (1961) defined a country's pool of human knowledge, education, skills and experiences as its human capital. He expounded a human capital theory with the finding that a highly educated and healthy population was behind the post WW2 near miracles in Germany and Japan. He argued that a highly educated population would be highly productive while healthcare would preserve the gains of productivity made from education.

The three major findings in Shultz's theory are:

1. Countries without much human capital cannot manage physical capital effectively.

2. Economic growth can only proceed if physical capital and human capital rise together.
3. Human capital is the factor most likely to limit growth.

Shultz opined that knowledge and skills are a form of capital and an investment in human capital would enhance productivity and workers' earnings, thereby encouraging workers to invest more in themselves through learning and education. Sulisnaningrum (2022), in adopting the same theory, argued that there is a mutually reinforcing relationship among the three variables of human capital, technology and economic growth. Investment in technology and human capital may increase the speed and quality of job execution of workers and ultimately enhance economic growth.

2.2.2 Keynesian theory of Poverty:

The Keynesian theory focuses on unemployment as a major cause of poverty. The theory focuses on the interplay of macroeconomic forces and emphasized the role of government in instilling economic stability and public goods. Keynes believed the fiscal policy of government in adjusting government spending and tax rates is the most effective way to influence aggregate demand and employment. Fiscal policy in the Keynesian theory, is a distinctly demand side policy instrument. It holds that the government can influence aggregate demand directly through its expenditure and indirectly through taxation (Maku *et al*, 2020).

Keynes suggested the fiscal policy of directly taxing communal savings and then investing such in private enterprises in a process he called "socialization of investment". He believed the process would encourage the investing class to invest in enterprise rather than save, and thereby boost employment. Some of the limitations of the Keynesian theory happened in the 1970s when high unemployment and rising inflation proved that "socialization of investment" would not always produce the desired effect of raising employment and curtailing poverty (Jensen, 1998).

2.2.3 The Lucas model

The Lucas model is also often referred to as the Uzawa-Lucas model, learning-by-education. It explains long-term economic growth as an outcome of human capital accumulation. Uzawa (1965) developed an endogenous growth model based on investment in human capital, which Lucas used. Uzawa (1965) argued that long term economic growth is a function of human capital accumulation, Lucas assumes that investment in education leads to human capital production, which is a crucial determinant in the growth process. He distinguishes between the internal effects of human capital where the individual worker undergoing training becomes more productive, and external effects which spillover and increase the productivity of capital and other workers in the economy. Investing in human capital rather than physical capital has spillover effects that increase the level of technology (Jhingan, 2011).

The Uzawa-Lucas model is built on two sectors, the human capital sector (producing human capital) and the physical capital sector (producing physical capital) which are both needed for economic growth. The Uzawa-Lucas model confirms the centrality of human capital to economic growth. Lucas, along with Romer, is one of the creators of the theory of endogenous growth.

In Lucas' model, human capital is seen as a factor of production and knowledge is central to accelerating economic growth. According to Lucas's model engine of economic growth is human capital.

A unique feature of Lucas (1988) theory is that human capital is regarded as a factor of production so that increasing or constant marginal returns (non-decreasing marginal returns) to human capital accumulation can determine endogenous growth. However, growth becomes endogenous only if there are constant or increasing returns thus making Lucas-Uzawa model (Lucas 1988; Uzawa 1965) to likely be applicable to economic development (Saka and Olanipekun 2021).

Due to its greater relevance to the Nigerian level of development and the variables chosen for this study, the **Lucas model** will form the theoretical foundation of this research. The key responsibility is to collect appropriate data and evaluate how those data validate or contradict the case for greater fiscal emphasis on human capital development in Nigeria and how the result could influence policy recommendations from the research.

2.3: Empirical Review

There is considerable literature on the critical subject of the relationship and causality between human capital development and poverty as represented by economic growth. The findings from the various studies have shown divergent results but with most of them supporting the proposition that human capital investment leads to economic growth and potential reduction in poverty.

Ajayi et al (2020) used the Ordinary Least Square (OLS) method and established a direct positive relationship between public expenditures on education and health and economic growth in Nigeria, and so did Ewubare and Mark (2018) as they found a significant impact of primary and secondary school enrolments and public healthcare expenditure on poverty level while there is no significant influence of private healthcare spending on poverty level. Study also indicates that public sector spending in health would trigger a more robust impact in reducing the level and depth of poverty in Nigeria, an outcome which was in sharp contrast with the finding of Lawanson (2017) whose study, utilizing the Autoregressive Distributed Lag (ARDL) model, found that government spending on education and health negatively impacted economic growth in Nigeria during the years of her study. Onifade et al (2020) made similar findings as they investigated the impacts of public expenditures on economic growth with respect to capital expenditure, recurrent expenditure to various sectors in the context of the Nigerian economy. Pesaran's ARDL approach was applied to carry out the impact analysis and the study findings reported recurrent expenditures of government to be significantly negatively impacting on economic growth while the positive impacts of public capital expenditures were not significant to economic growth over the period of the study. Adeyemi and Ogunsola (2020) also results also found a negative long-run relationship among primary and tertiary school enrolments, public expenditure on health and economic growth.

Adekoya (2018) using Granger Causality method through a Vector Error Correction Model (VECM) found that there was no causality, whether bi-directionally or uni-directionally, between government expenditures on education and health and GDP per capita in Nigeria in the years of his study. Adelowokan et al (2020) also came to a similar finding as they examined the effect of fiscal policy on poverty reduction in Sub-Saharan African (SSA) countries from 1999 to 2016, using the Pooled Mean Group (PMG) estimation model. They found that fiscal policy is positive but insignificant to poverty reduction in SSA, both in the long and short runs. They concluded that fiscal policy does not have poverty reduction impact in the region, apparently due to very low outlays and institutional weaknesses.

The study by Appiah (2017) disagreed diametrically with this in its conclusion that expansion in education expenditure in the developing and Sub-Sahara African (SSA) countries affects GDP per capita positively. Diakodimitriou et al (2025) using the adaptive LASSO and 3SLS models found that education expenditure significantly influences GDP per capita, identifying the R&D expenditures as the main channel through which education expenditures influence economic growth. Fan et al (2025) adopting the Granger causality test, established a relationship between GDP per capita and Government expenditure on education for a short term (2-7 years), although a bidirectional relationship emerges between these variables in the longer term of 8-12 years. Government expenditure on education is more responsive to per capita GDP in developed countries than in less developed countries.

On the roles of institutional quality, Nguyen et al (2018) and Wandeda (2021) Aslam (2020), Arvin et al (2021), Madni and Chaudhary (2017), Nguyen et al (2018), Dankumo et al (2021), Wandeda (2021), Abubakar (2020), Emmanuel et al (2024) and Gardezi et al (2022) found it to have significant positive effect by reinforcing the impact of human capital investments on economic growth. Nguyen and Bui (2022), on the other hand, concluded that government expenditure and Corruption Control have a negative impact on economic growth in the selected 16 Emerging Markets and Developing Economies (EMDEs) in Asia but the interactive effect would be positive if Corruption Control is above the threshold value of 0.01, otherwise the impact would be negative. This confirms the positive impact of institutional quality if established in the right quantum in a country.

The studies reviewed made disparate empirical findings on the impact and significance of human capital development on GDP/GDP per capita and poverty reduction in Nigeria, SSA and other parts of the world and at different time horizons. There is a curious observation that most studies which investigated the relationship have found that the positive impact and significance of human capital expenditures have been lower in developing countries and Sub Saharan Africa than in most of the rest of the world, and the most rational explanation would be found in institutional factors. This may be due to the twin factors of low fiscal investments on human capital development and the institutional weaknesses which hinder the effectiveness of the expenditures to achieve the objectives just as Maruta and Banerjee (2020) established that aid assisted government expenditure on education yields stronger GDP per capita growth when backed by higher levels of institutional quality, and underscoring the need for stronger institutions for more impactful social investment by the government.
The impact of institutional quality has been under-investigated in the effect of government expenditures on education and health on GDP or GDP per capita as most studies did not factor in the element of institutional quality in their analyses. This study aims to fill that gap by investigating the interaction effect of institutional quality in the relationships in Nigeria.

3. METHODOLOGY

3.1 Theoretical Framework

Though the fundamental conclusion of the Endogenous growth theories is the centrality of human capital development or human capital investment, to economic growth, there are slight differences in the parameters and measurements of human capital adopted in each of the models.
Uzawa (1965) considers a broad view of human development where he takes the factor multiplying the production function, A, as reproducible and no longer 'exogenous' as in the neoclassical model. Whereas later authors such as Romer (1986, 1990) narrowed their definition of A to be Research and Development 'ideas', etc. Uzawa's initial model is more in

line with this paper by viewing A as the "various activities in the form of education, health, construction and maintenance of public goods, etc., which result in an improvement of labour efficiency". This framework was later modified by Lucas (1988) who instead assumed a linear production technology for A, in which case growth rates need not go to zero in finite time. Lucas' reflections on the alternative sources of sustained growth from 1960 era models showed how countries could grow at different rates indefinitely, depending on their human capital. (Boozer et al, 2003).

A unique feature of Lucas (1988) theory is that human capital is seen as a factor of production so that constant or increasing marginal returns to human capital accumulation can determine endogenous growth (Saka and Olanipekun, 2021). However, growth becomes endogenous only if there are constant or increasing returns thus making Lucas-Uzawa model (Lucas 1988; Uzawa 1965) to likely be applicable to economic development. Through modification of Lucas (1988) model of the form: $y = (azh_r)^{\alpha}(1-\mu)h_p)^{\beta}K^{1-\alpha-\beta}$, Saka and Olanipekun (2021) obtained $gr = \alpha_0 + \alpha_1 ltr_m + \alpha_2 ltr_f + \alpha_3 le_m + \alpha_4 le_f + \alpha_5 idx + \alpha_6(ltr_m * idx) + \alpha_7(ltr_f * idx) + \alpha_8 pv_i + \varepsilon_i$ to explore the relationship between human capital development and industrialisation in Nigeria. Where ltr_m is human capital for male captured by the male literacy rate, ltr_f indicates human capital for female captured by the female literacy rate, le_m is life expectancy for male, le_f represents life expectancy for female, idx is industrialization index, pv_i indicates poverty incidence, $(ltr_m * idx)$ captures the interaction between human capital for male and the industrialization index while $(ltr_f * idx)$ also indicates the interaction between human capital for male and the industrialization index.

A major criticism of the Uzawa-Lucas model is that it is a linear function and cannot account for non -linearities that may often be encountered in the growth paths thrown up by empirical data. Despite this limitation, the Uzawa-Lucas model has shown enough utility to provide a very reliable explanation of economic growth as a product of human capital development in Nigeria based on the country's level of development and the variables of education and health spendings that have been adopted for this study. This study has thus adopted the Uzawa-Lucas economic growth theory as the theoretical foundation upon which the study is established.

3.2 Model Specification

Through modification of Saka and Olanipekun (2021), the linear equation specification for this study is given as:

$$GDPPC_t = \beta_0 + \beta_1 GCF_t + \beta_2 LBR_t + \beta_3 GEE_t + \beta_4 GEH_t + \beta_5 IQA_t + \varepsilon_t \quad (3.1)$$

where:
GDPPC = gross domestic product per capita
GCF = gross capital formation
LBFR = labour force participation rate
GEE = government expenditure on education
GEH = government expenditure on health
IQA = institutional quality

Table 3.1: Data Definition, Measurement and Sources

Variables	Definition	Measurement	Source
GDPPC	Gross Domestic product per capita	US Dollars	WDI
GCF	Gross Capital Formation	US Dollars	WDI
LBFR	Labour force participation Rate	Millions (15 to 65 years)	WDI
GEE	Government Expenditure on Education	In Naira	CBN/NBS

GEH	Government Expenditure on Health	In Naira	CBN/NBS
IQA	Institutional quality - control of corruption, government effectiveness, political stability, regulatory quality, rule of law, and voice and accountability.	Percentile scores	WGI

Source: Researcher's Compilation (2023)

3.3 Data and Data Sources

The secondary data used for this study was sourced from the Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), World Development Indicators (WDI) and Worldwide Governance Indicators (WGI). The Federal budget expenditure figures were sourced from the CBN and NBS, gross capital formation, labour force participation and GDP per capita figures were obtained from the World Bank (WDI) while Institutional Quality figures were obtained from the World Bank (WGI).

The annual time series data spanning 1989-2022 sourced from the above reputable institutions will be the variables of interest in this study. GEE (Government Expenditure on Education), GEH (Government Expenditure on Health), GCF (Gross Capital Formation), LBFR (Labour force Participation Rate), IQA (Institutional Quality) and GDPPC (Gross Domestic Product Per Capita) are the variables for examination in the study.

3.4: Estimation Method

There is no presence of unit root and there is evidence of cointegration among the variables, study therefore proceeded to use autoregressive distributed lag (ARDL) proposed by Pesaran & Shin (1997) because of its advantages over other cointegration methods such as Johansen & Juselius (1990) and Johansen (1991). The ARDL method has three main advantages; firstly, compared to other multivariate cointegration methods, the bound test is a simple technique because it allows the cointegration relationship to be estimated by OLS once the lag order of the model is identified. Secondly, the unit root test is not a pre-condition of this model. It is only necessary to ensure that none of the variables being examined is integrated of order two that is, I(2). Thirdly, the long-run and short-run parameters of the model can be estimated concurrently. ARDLs are usually denoted with the notation ARDL $(p, q_1, .., q_k)$, where p is the number of lags of the dependent variable, q_1 is the number of lags of the first explanatory variable, and q_k is the number of lags of the k-th explanatory variable. Thus, a general ARDL $(p, q_1, q_2, \dots, q_k)$ is specified as follows:

$$y_t = \delta + \sum_{t=1}^{p} \alpha_i \, y_{t-i} + \sum_{j=1}^{k} \sum_{t-1}^{q} \beta_j \chi_{t-i} + \varepsilon_t \quad \dots\dots\dots\dots\dots\dots\dots\dots 3.25$$

where $\varepsilon_t$is the error term, δ is a constant term, and α_i and $\beta_{j,i}$ are respectively the coefficients of lags of y_t, and lags of the k regressors $x_{j,t-i}$ for $j = 1, 2, 3, \dots, k$.

To ascertain the existence of a long run relationship between variables in study, two alternative tests were suggested by Pesaran, Shin, & Smith (2001). Firstly, an F-statistic is employed to test the joint significance of the first lag of the variables in levels, that is, $\delta_1 = \delta_2 = \delta_3 = \delta_4 = \delta_5$=0 and then a t-statistic is used to test the individual significance of the lagged dependent variables in levels, that is $\delta_1 = 0$.

If one cointegrating vector is identified, the ARDL model of the cointegrating vector is re-parameterised into error correction model (ECM). The re-parameterised result gives the short

run dynamics (i.e., traditional ARDL) and long run relationship of the variables of a single model. The unrestricted error correction model associated with the ARDL $(p, q_1, \ldots, q_k)$ can be obtained in terms of the lagged levels and the first differences of the dependent and independent variables with the addition of stochastic term.

This choice of this method is informed by the fact that both short-run and long-run coefficients can be estimated simultaneously in contrast to other techniques besides the advantages already mentioned.

4 RESULTS AND DISCUSSION OF FINDINGS

4.1. Descriptive statistics:

The characteristics of the data series as revealed through descriptive statistics that encompasses measures of central tendency, variability, and probability distribution is presented in Table 4.1

Table 4.1 Descriptive/Summary Statistics

	GDPPC	GFCF	LBFR	GEE	GEH	IQA
Mean	286690.9	1.21E+13	59.4413	231.7100	156.1427	13.9377
Median	210456.8	7.00E+12	60.2490	166.6200	106.9400	15.4203
Maximum	925981.1	7.53E+13	60.7120	753.1400	592.9500	17.4796
Minimum	5195.059	2.63E+11	55.2700	1.5400	0.5900	4.8190
Std. Dev.	277200.5	1.72E+13	1.5309	226.8472	164.1435	3.2910
Jarque-Bera	3.5961	63.6847	10.2882	3.3204	4.7258	10.9327
Probability	0.1656	0.0000	0.0058	0.1901	0.0941	0.0042
Observations	33	33	33	33	33	33

Source: Researcher`s computation (2025)

Note: All variable values are in the raw form without transformation and treatment for missing values.

LBFR and IQA have the least standard deviations, meaning that the data series clusters around the mean. With their high Jarque-Bera statistics and the associated low probabilities of under 0.05, it is evident that the data series for GCF, LBFR and IQA do not exhibit normal distribution while the remaining variables exhibit normal distribution as their probability values exceed 0.05 indicating statistical insignificance.

4.1.2 Stationarity or Unit root tests

It is imperative to test for the stationarity or unit root to ascertain the time series properties of the data series. This is because economic events are not static but change overtime due to various factors such as government policy, natural occurrences, pandemics and war whereas most econometric techniques are based on the assumptions that the mean, variance and covariance of the data series remain constant over time, that is, they are time-invariant (stationary). The estimation results from a non-stationary time series suffers from spurious regression problem (Bai & Perron 1998; 2003) that would be unsuitable for policy prescriptions. The outcome of the unit root tests assisted to determine the appropriate estimation technique to use in this study. The study chose the Augmented Dickey-Fuller (ADF) (Dickey and Fuller, 1979) and Phillips –Perron (PP) (Phillips and Perron, 1988) unit root tests. They test the null hypothesis that a series is non-stationary (has a unit root) while the alternative is that there is stationarity (has no unit root). The outcomes of the unit root test are presented in Table 4.2

Table 4.2: Unit root test results (With Intercept)

Augmented Dickey Fuller (ADF)				Phillips-Perron (PP)		
Variables	**Level**	**1st Difference**	**Status**	**Level**	**1st Difference**	**Status**
LNGDPPC	-4.6634***	-2.4382	I(0)	-4.8923***	-3.0026**	I(0)
LNGEE	-2.3408	-1.0102	NA	-7.3912***	-5.4005***	I(0)
LNGEH	-3.3837**	-5.0579***	I(0)	-12.312***	-5.0788***	I(0)
LNGFCF	-0.8168	-3.8627***	I(1)	-0.7988	-4.0166**	I(1)
LNBFR	-2.2312	-4.1992	I(1)	-1.6492	-3.1312**	I(1)
LNIQA	-4.8062***	-3.0210**	I(0)	-5.2333***	-5.3409***	I(0)

Note: ***, **, * denote 1%; 5% and 10% significant levels respectively
Authors' compilation, 2025 with EViews 12

Note: All variables have been transformed into logarithm form after treatment for missing values using interpolation method. Since all the variables in the model are integrated of different orders, that is, I (0) and one I (1) performing cointegration test is necessary according to Pesaran et al (2001).

Table 4.3: Results of Bound Test Statistics for Cointegrating Relationship

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Significance.	I(0)	I(1)
F-statistic	15.3521	10%	2.26	3.35
K	5	5%	2.62	3.79
		2.5%	2.96	4.18
		1%	3.41	4.68

Authors' compilation 2025

The results of ARDL Bound test statistics for cointegrating relationship as shown in Table 4.3 suggest the existence of long-run relationships among the variables since the null hypothesis of no levels relationship between variables is rejected based on the value of F-statistics (15.3521) that is greater than Pesaran critical value of upper bound limit (4.68) at 1% significance level.

Upon confirmation of the cointegrating relationship, the long-run effect of Government Expenditures on Education and Health and institutional quality on GDP per capita is estimated using the ARDL model. The results of the estimation are reported in Table 4:4 below.

Table 4.4: Result of Long Run Relationship – Dependent Variable: LNGDPPC

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGCF	0.1089	0.0588	1.8531	0.08*
LNLBFR	3.0281	1.3110	2.3098	0.03**
LNGEE	1.7914	0.382099	4.6884	0.00***
LNGEH	-0.8072	0.287870	-2.8040	0.01**
LNIQA	-1.1063	0.307398	-3.5988	0.00***

Note: ***, **, * denote 1%; 5% and 10% significant levels respectively
Authors' compilation, 2025 with EViews 12
Note: All variables have been transformed into logarithm form after treatment for missing values using interpolation method.

The equation for interpretation is specified as:

$$LNGDPPC_t = \beta_0 + \beta_1 LNGFCF_t + \beta_2 LNLBFR_t + \beta_3 LNGEE_t + \beta_4 LNGEH_t + \beta_5 LNIQA_t \quad (4.1)$$

$$LNDGPPC_t = -2.862 + 0.109LNGFCF_t + 3.028LNLBFR_t + 1.791LNGEE_t - 0.807LNGEH_t - 1.106LNIQA_t \quad (4.2)$$

The estimated long run coefficients of the ARDL for government expenditures on education and health showed evidence of significant positive relationship between government expenditure on education and gross domestic product per capita and significant negative relationship with government expenditure on health and gross domestic product per capita. Gross capital formation and labour force participation rate also exhibited positive relationships with gross domestic product per capita while institutional quality showed a negative relationship with gross domestic product per capita. This implies that increases in government expenditure on education will be associated with increases in gross domestic product per capita while increases in government expenditure on health will be accompanied by decreases in gross domestic product per capita. Furthermore, increases in gross capital formation and labour force participation rate will be associated with increases in gross domestic product per capita while increases in institutional quality will be accompanied by reductions in gross domestic product per capita. In magnitude terms, a 1 unit increase in government expenditure on education will be associated with a 1.791 unit increase in gross domestic product per capita while a 1 unit increase in government expenditure on health will be accompanied by a 0.8 unit decrease in gross domestic product per capita. In the same breath, a 1 unit increase in gross capital formation, labour force participation rate and institutional quality will be associated with a 0.11 unit increase, 3.03 unit increase and a 1.11 unit decrease in gross domestic product per capita respectively.

Government expenditures on education and health, as well as institutional quality are all statistically significant at 1% while labour force participation rate is significant at 5%, with gross capital formation being insignificant. To this effect, government expenditures on education and health, labour force participation and institutional quality have been found to significantly influence per capital income (GDPPC) while gross capital formation is insignificant in Nigeria in the years of the study.

Table 4.5: Result of Short Run Relationship – Dependent Variable: LNGDPPC

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.8621	0.2716	-10.5385	0.00***
D(LNGEE)	0.3645	0.0596	6.1180	0.00***
D(LNGEE(-1))	-0.3456	0.0483	-7.1571	0.00***
D(LNGEH)	-0.1547	0.0586	-2.6408	0.02**
D(LNGEH(-1))	0.1251	0.0489	2.5601	0.02**
D(LNIQA)	-0.0029	0.0824	-0.0352	0.97
D(LNIQA(-1))	0.3883	0.0772	5.0281	0.00***
CointEq(-1)*	-0.5187	0.0478	-10.8490	0.00***
R-squared	0.8993	Mean dependent var		0.1623
Adjusted R-squared	0.8687	S.D. dependent var		0.1189
S.E. of regression	0.0431	Akaike info criterion		-3.2335
Sum squared resid	0.0427	Schwarz criterion		-2.8634
Log likelihood	58.1185	Hannan-Quinn criter.		-3.1128
F-statistic	29.3537	Durbin-Watson stat		2.5120
Prob(F-statistic)	0.0000			

Note: ***, **, * denote 1%; 5% and 10% significant levels respectively
Authors' compilation, 2025 with EViews 12

Note: gross domestic product per capital (GDPPC), is the dependent variable while gross fixed capital formation (GFCF), labour force participation rate (LBFR), government expenditure on education (GEE), government expenditure on health (GEH) and institutional quality (IQA) are the independent variables. All variables have been transformed into logarithm form after treatment for missing values using interpolation method.

The equation for results interpretation is specified as:

$$\Delta LNGDPPC_t = \Delta LNGEE_t + \Delta LNGEE_{t-1} + \Delta LNGEH_t + \Delta LNGEH_{t-1} + \Delta LNIQA_t + \Delta LNIQA_{t-1} + ECT_{t-1} \quad (4.3)$$

$$\Delta LNGDPPC_t = 0.365LNGEE_t - 0.346LNGEE_{t-1} - 0.155LNGEH_t + 0.125LNGEH_{t-1} - 0.003LNIQA_t + 0.388LNIQA_{t-1} - 0.519ECT_{t-1} \quad (4.4)$$

The short run estimated coefficient is presented in Table 4.5. The most important component of the short run estimates is the error correction term (ECT) which measures the speed of adjustment back to long run equilibrium in the event of a shock in the system. From Table 4.5, the value of ECT is -0.5187 and statistically significant at 1%.

In the short run, there is evidence the previous value of government expenditure on education, current values of government expenditure on health and institutional quality have negative relationships with gross domestic product per capita while the current value of government expenditure on education, the previous values of government expenditure on health and institutional quality have positive relationships with gross domestic product per capita in Nigeria during the period covered by the study. Both the previous value of government expenditure on education and current value of government expenditure on health are statistically significant at 1% and 5% respectively. Thus, they are important factors that determine gross domestic product per capita in the short run. Both current value of GEE and previous value of IQA are statistically significant at 1% while past value of GEH is significant at 5% and are also important determinants of gross domestic product per capita in Nigeria in the years of the study.

Diagnostic Tests

The results of the diagnostic or post estimation tests are summarised as follows:

Table 4.6: Summary of Diagnostic Tests

Tests	Statistics	Prob. Value	Remarks
Normality – JB	1.2501	0.5352	Normality
Serial correlation	1.5652	0.2394	No Serial correlation
Heteroskedasticity	0.6178	0.8009	Homoskedasticity

Authors' compilation 2025

The post estimation test captured by Jarque-Bera, Serial Correlation, Breusch-Godfrey, ARCH Heteroskedasticity among others on regression, reveal not only the robustness of the estimated equation results but the desired properties of an econometric model. The diagnostic tests confirm the suitability of the estimated models. Thus, the model residual series are normally distributed as suggested by the Jarque–Bera statistics, while the Breusch–Godfrey LM test statistics indicate that the model does not have significant serial correlation problem. The Breusch-Pagan-Godfrey test also produced desired result as the variances are constant overtime, hence homoskedastic. Overall, the results are satisfactory.

Stability Test

Stability test was also conducted using Cumulative Sum (CUSUM) and Cumulative Sum of Square (CUSUM SQ) of residual of the model as shown in figures 4.2 and 4.3. From figures 4.2 and 4.3, it can be inferred that the model at 5 percent level of significance has been stable over time since the blue line lies in-between the two red lines in both figures.

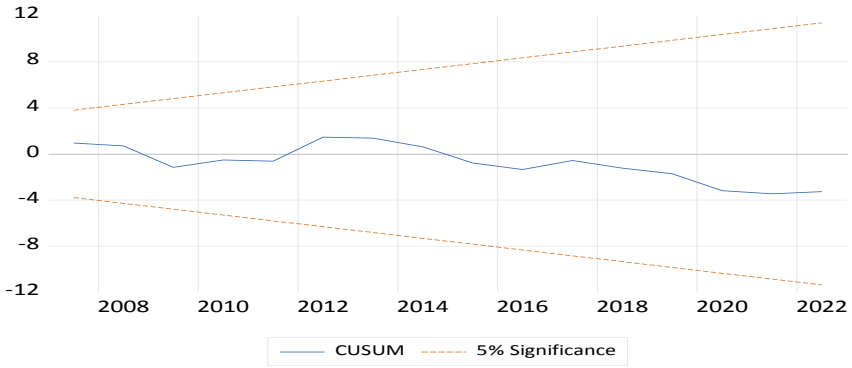

Figure 4.2: Cumulative sum

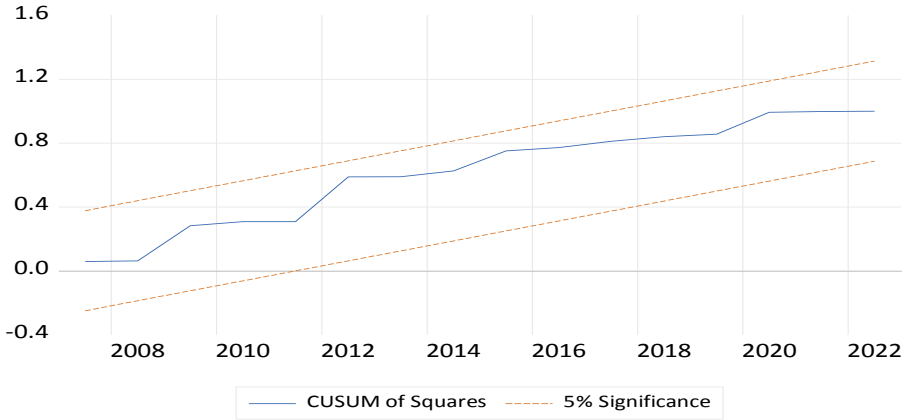

Figure 4.3: Cumulative sum of squares

4.3: Discussion of Findings

The empirical findings of Tomic (2015), Osoba and Tella (2017), Ogundari and Awokuse (2018), Liao et al (2019), Chijioke and Amadi (2019), Ajayi et al (2020) and Ojo and Ojo (2022), provided evidence of positive long run relationships, in varying degrees, between Government Expenditure on Education and economic growth and between Government Expenditure on Health and economic growth. Their findings align perfectly with economic theory and encourage additional government spending on education and health in Nigeria.

In contrast to those findings were the research conclusions of Emeghara et al (2021) that Government Expenditures on Education and on Health did not have any positive or significant influence on economic growth in Nigeria except for Government Expenditure on Education which only impacted positively and significantly on economic growth in the short run. Aside this short run impact, the study found that Government Expenditures on Education and on

Health did not stimulate growth in Nigeria, contrary to economic theory. Almost in sync with that, Lawanson (2017) could not establish a positive contribution of government expenditures on education and health to economic growth except in their recurrent components. By the findings of the Lawanson study, the capital votes on government expenditures on education and health have no link to economic growth.

Most of the studies (Appiah 2017, Ewubare and Mark 2018, Ajayi et al 2020, Diakodimitriou et al 2025) acknowledged the positive and significant connection between government expenditures on human capital development and economic development cum poverty reduction, especially in other parts of the world outside of Sub-Saharan Africa. The studies mostly posited that, relative to the rest of the world, government expenditures on education and health are extremely low and are not major contributors to economic growth in Nigeria and the rest of Sub-Saharan Africa.

Theoretically, the conclusions of this study find corroboration in the Uzawa-Lucas model, Learning-by-education, which explains long term economic growth as an outcome of human capital accumulation, namely the investment in education. Also related to the above is the Shultz (1963) Human Capital Theory that a highly educated population would be highly productive while healthcare would preserve the gains of productivity made from education.

On the contribution of institutional quality, Aslam (2020), Arvin et al (2021), Madni and Chaudhary (2017), Nguyen et al (2018), Dankumo et al (2021), Wandeda (2021), Abubakar (2020), Emmanuel et al (2024) and Gardezi et al (2022) argued that institutions reinforce the impact of human capital investments on economic growth. Profoundly however, an important finding of this study is about institutional quality coming with a negative sign in contrast to a priori expectation though with statistical significance. This corroborates the conclusion of Nguyen and Bui (2022) that government expenditure and corruption control have a negative impact on economic growth in selected 16 Emerging Markets and Developing Economies (EMDEs) in Asia but the interactive effect would be positive if Corruption Control is above the threshold value of 0.01, otherwise the impact would be negative. Though Nguyen and Bui (2022) found a negative sign for institutional quality, their finding corroborates its positive impact to spur economic growth through its interaction with government expenditure if available in the right magnitudes.

In varying degrees, most of the studies validated the positive impact of institutional quality in catalysing economic growth and poverty reduction through government spending.

4. CONCLUSIONS AND RECOMMENDATIONS

From the empirical findings, the study opined that there is a positive and statistically significant long run relationship between Government Expenditure on Education and GDP per capita and a negative and significant long run relationship between Government Expenditure on Health and GDP per capita. The short run evidence is of the previous value of government expenditure on education, current values of government expenditure on health and institutional quality having negative relationship with gross domestic product per capita. This means that increase in the previous value of government expenditure on education, current values of government expenditure on health and institutional quality would lead to decrease in gross domestic product per capita.

Another conclusion of the study is the negative long run effect of institutional quality on gross domestic product per capita, in contrast to a priori expectation, though with statistical significance. This corroborates the conclusion of Nguyen and Bui (2022) that government

expenditure and corruption control have a negative impact on economic growth in their analysis but the interactive effect would be positive if Corruption Control is above the threshold value of 0.01, otherwise the impact would be negative.

The negative and significant long run relationship between Government Expenditure on Health and GDP per capita is symptomatic of the gross underfunding of the health sector by successive governments in Nigeria. To put Nigeria's healthcare back on track and for government expenditure on health to stimulate development, the country requires concerted efforts signalled by strong and competently implemented health policies backed by the necessary tangible and judiciously invested healthcare budgets.

Though government expenditure on education is found to contribute positively to economic development, the magnitude is insignificant due to the low quantum of the education budgets. The contribution of the education budgets could be higher if the budget outlays could be boosted. Nigeria's educational budgets are too low for the needs of its teeming youth population and are always much lower than the recommendations of the United Nations.

Institutional quality is also very low in Nigeria as reflected in its abysmally low scores in the World Governance Indicators (WGI) of the World Bank. The policy measures to boost institutional quality on a sustainable basis will be an added impetus to the effect of government outlays on education and health in raising the GDP per capita and lowering poverty in Nigeria. Nigeria's low institutional quality scores constitute a serious leakage to the effectiveness of government expenditure in accomplishing set targets. For Nigeria to effectively tackle poverty, its policy makers would have to address the important issue of institutional quality while boosting public spendings on education and health.

REFERENCES

Abubakar, S. (2020). Institutional quality and economic growth: Evidence from Nigeria. *African Journal of Economic Review*, *8*(1), 48-64.

Addae-Korankye, A. L. E. X. (2019). Theories of poverty: A critical review. *Journal of Poverty, Investment and Development*, *48*(1), 55-62.

Adegboye, F. B., Osabohien, R., Olokoyo, F. O., Matthew, O., & Adediran, O. (2020). Institutional quality, foreign direct investment, and economic development in sub-Saharan Africa. *Humanities and social sciences communications*, *7*(1), 1-9.

Adekoya, O. D. (2018). Impact of human capital development on poverty alleviation in Nigeria. *International Journal of Economics & Management Sciences*, *7*(4), 1-8

Adelowokan, O. A., Osoba, O. M., & Ajibowo, S. A. (2020). Fiscal Policy and Poverty Reduction in Some Selected Sub-Saharan Africa Countries. *International Journal of Social Sciences (IJSS)*, *10*(1), 1-10.

Adeyemi, P. A., & Ogunsola, A. J. (2016). The impact of human capital development on economic growth in Nigeria: ARDL approach. *IOSR Journal of Humanities and Social Science*, *21*(3), 1-7.

Aguilar, R. A. C., Fujs, T., Lakner, C., Mahler, D. G., Nguyen, M. C., & Baah, S. K. T. (2020).September 2020 global poverty update from the World Bank: New annual poverty estimates using the revised 2011 PPPs.

Web satfası: https://blogs. worldbank.org/opendata/september-2020-global-poverty-updateworld-bank-new-annualpoverty-estimates-using-revised (EriĢim tarihi: 10.05. 2020).

Ajayi, O. O., Eghafona, K. A., & Ibiezugbe, M. I. (2020). Human capital investment and poverty reduction: challenges and opportunities for sustainable development in Nigeria. *Journal of Humanities and Social Science*, *25*(5), 39-48.

Amar, S., & Pratama, I. (2020). Exploring the link between income inequality, poverty reduction and economic growth: An ASEAN perspective. *International Journal of Innovation, Creativity and Change*, *11*(2), 24-41.

Andabai, P. W., & Eze, G. P. (2017). Empirical investigation of human capital investment and its effects on economic growth in Nigeria. *European Journal of Business and Innovation Research, 6 (6), 73-80. https:/www.eajournals. org*.

Appiah, E. N. (2017). The effect of education expenditure on per capita GDP in developing countries. *International Journal of Economics and Finance*, *9*(10), 136-144.

Ashraf, S., Raza, A., & Khan, I. T. (2023). Impact of educational expenditure on economic growth in Asian countries. *International Journal of Contemporary issues in Social Sciences, 2(4), 819-826.*

Astuti, I., & Prabowo, B. H. (2021). Economic Growth, Human Capital and Technology Inclusion in Indonesia: English. *Splash Magz*, *1*(3), 26-29.

Awoyemi, B. O., Makanju, A. A., Mpapalika, J., & Ekpeyo, R. S. (2023). A time series analysis of government expenditure and health outcomes in Nigeria. *Journal of public health in Africa*, *14*(7), 1409.

Bannister, G., & Mourmouras, A. (2018). Welfare Versus GDP: What Makes People Better Off. *IMF Blog. At: https://blogs. imf. org/2018/03/07/welfare-versus-gdp-what-makes-people-better-off/. Accessed March*, *12*, 2018.

Bassey, G. E., Ekong, U. M., & Ekpenyong, B. E. (2023). Government expenditure and human capital development in Nigeria. *Advances in Social Sciences and Management*, *1*(1), 1-21.

Becker, G. S., & Capital, H. (1964). A Theoretical and empirical Analysis. *National Bureau of*.

Chijioke, A. K., & Amadi, A. I. (2019). Human capital investment as a catalyst for sustainable economic development in Nigeria. *International Journal of management science and business Administration*, *5*(5), 13-22.

Dankumo, A. M., Ishak, S., Bani, Y., & Hamza, H. Z. (2021). Governance, public expenditure, trade and poverty reduction in sub-saharan african countries. *Jurnal Ekonomi dan Studi Pembangunan*, *13*(1), 16-35.

Davis, E. P., & Sanchez-Martinez, M. (2014). A review of the economic theories of poverty (National Institute of Economic Social Research Discussion paper,(435)). *London: NIESR*.

Dědeček, R., & Dudzich, V. (2022). Exploring the limitations of GDP per capita as an indicator of economic development: a cross-country perspective. *Review of Economic Perspectives*, *22*(3), 193-217.

Dollar, D., Kleineberg, T., & Kraay, A. (2016). Growth still is good for the poor. *European Economic Review, 81, 68-85.*

Dudzevičiūtė, G., Šimelytė, A., & Liučvaitienė, A. (2018). Government expenditure and economic growth in the European Union countries. *International Journal of Social Economics*, *45*(2), 372-386.

Eggoh, J., Houeninvo, H., & Sossou, G. A. (2015). Education, health and economic growth in African countries. *Journal of Economic Development, 40(1), 93.*

Ejere, S. I. (2011). Human capital formation as catalyst for national development: Nigeria in perspective. *International Business and Management*, *2*(2), 98-104.

Emmanuel, N., Usifoh, K. S., & Adu, M. J. (2024). Institutional Quality, Government Expenditure and Economic Growth Nexus in Nigeria. *NG Journal of Social Development*, *13*(1), 1-19.

Ewubare, D. B., & Mark, T. (2018). Human capital development and poverty reduction in Nigeria. *Journal of Economics and Business*, *1*(2), 150-163.

Fan, L., Zheng, M., Luo, R. & Auchynnikava, A. (2025). The Role of Per Capita GDP in Intergenerational Mobility in Education: A Cross-Country Study. *Journal of Social Sciences*, *21*(1), 1-17. https://doi.org/10.3844/jssp.2025.1.17

Gardezi, M. A., Mehmood, K. A., & Munir, F. (2022). Fiscal Policy, Institutional Quality and Economic Growth: Some Evidence from Pakistan. *Journal of Social Sciences Review*, *2*(3), 110-118.

Ilegbinosa, I. A. (2013). Human capital investment as an effective tool for economic development in Nigeria. *International Journal of Management and Business Studies*, *3*(1), 7-13.

IMF Macroeconomic Policy and Poverty Reduction (August 2001)
https://www.imf.org/external/pubs/ft/exrp/macropol/eng/

IMF: Growth versus poverty reduction: a hollow debate (December 2000)
https://www.imf.org/external/pubs/ft/fandd/2000/12/rodrik.htm

IMF World Economic Outlook (April 2025)
https://www.imf.org/external/datamapper/NGDPDPC@WEO/OEMDC/ADVEC/WEOWORLD

Jensen, H. E. (1998). Dead Economists as Inspirators of Living Social Economists. *Review of Social Economy*, *56*(2), 119–135. http://www.jstor.org/stable/29769941

Kaufmann, D., Kraay, A., & Zoido-Lobatón, P. (1999). *Aggregating governance indicators* (Vol. 2195). World Bank publications.

Kaufmann, D., Kraay, A., & Zoido-Lobaton, P. (2000). Governance matters. *Finance Dev*, *37*(2), 10. *Available at SSRN 188568*.

Khan, M., Raza, S., & Vo, X. V. (2024). Government spending and economic growth relationship: can a better institutional quality fix the outcomes?. *The Singapore Economic Review*, *69*(01), 227-249.

Lawanson, O. I. (2017). Human capital investment and economic development in Nigeria: A focus on education and health. *Journal of Economics and Policy Analysis,2*(1), 95-112.

Loayza, N. V., & Pennings, S. (2020). Macroeconomic policy, growth, and poverty reduction. *Journal of Economic Surveys, 34(4), 792–847. https://doi.org/10.1111/joes.12377*

Lucas Jr, R. E. (1988). On the mechanics of economic development. *Journal of monetary economics*, *22*(1), 3-42.

Lucas Jr, R. E. (2009). Ideas and growth. *Economica*, *76*(301), 1-19.

Madni, G. R., & Chaudhary, M. A. (2017). Economic growth in context of institutions and fiscal policy. *Pakistan Economic and Social Review*, *55*(1), 107-126.

Mansi, E., Hysa, E., Panait, M., & Voica, M. C. (2020). Poverty—A challenge for economic development? Evidences from Western Balkan countries and the European Union. *Sustainability*, *12*(18), 7754.

Maruta, A. A., Banerjee, R., & Cavoli, T. (2020). Foreign aid, institutional quality and economic growth: Evidence from the developing world. *Economic Modelling*, *89*, 444-463.

Mulok, D., Kogid, M., Asid, R., & Lily, J. (2012). Is economic growth sufficient for poverty alleviation? Empirical evidence from Malaysia. *Cuadernos de economía*, *35*(97), 26-32.

Nawaz, S., Iqbal, N., & Khan, M. A. (2014). The impact of institutional quality on economic growth: Panel evidence. *The Pakistan Development Review*, *53*(1), 15-31 http://www.jstor.org/stable/24397923

Nguyen, C. P., Su, T. D., & Nguyen, T. V. H. (2018). Institutional quality and economic growth: The case of emerging economies. *Theoretical Economics Letters*, *8*(11), 1943-1956.

Nolan, B., Roser, M., & Thewissen, S. (2019). GDP per capita versus median household income: What gives rise to the divergence over time and how does this vary across OECD countries? *Review of Income and Wealth*, *65*(3), 465-494.

Ogundari, K., & Awokuse, T. (2018). Human capital contribution to economic growth in Sub Saharan Africa: does health status matter more than education? *Economic Analysis and Policy, 58*(C), 131-140.

Ohaegbulem, E. U., & Chijioke, S. C. (2023). On Nigeria's Budgetary Allocations to The Education Sector (1960-2023) In View of UNESCO'S Benchmarks. *International Journal of Mathematics and Statistics Studies, 11*(4), 32-44.

Ojo, T. J., & Ojo, S. I. (2022). Health expenditure, education and economic growth in Nigeria. *Open Journal of Social Science and Humanities,3*(1), 01-17.

Onifade, S. T., Çevik, S., Erdoğan, S., Asongu, S., & Bekun, F. V. (2020). An empirical retrospect of the impacts of government expenditures on economic growth: New evidence from the Nigerian economy. *Journal of Economic Structures*, *9*(1), 1-

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of applied econometrics*, *16*(3), 289–326.

Poniatowicz, M., Dziemianowicz, R., & Kargol-Wasiluk, A. (2020). Good governance and institutional quality of public sector: Theoretical and empirical implications. *European Research Studies Journal. Volume XXIII, Issue 2, 2020pp. 529-556*

Saka, J., & Olanipekun, D. B. (2021). Human Capital Development and Industrialization in Nigeria: Implication for Economic Growth. *Religación: Revista de Ciencias Sociales Humanidades*, *6*(27), 280-295.

Schultz, T. W. (1961). Investment in human capital. *The American economic review*, *51*(1), 1-17.

Todaro, M. P. "Economics for a Developing World", Longman Publishers, London, 1980.

UNESCO: UNESCO member states unite to increase investment in education *https://www.unesco.org/en/articles/unesco-member-states-unite-increase-investment-education*

Wandeda, D. O. (2021). *Government expenditure, efficiency, institutional quality and economic growth in Sub-saharan African countries* (Doctoral dissertation, University of Nairobi).

World Bank (2014): A measured approach to ending poverty and boosting shared prosperity https://openknowledge.worldbank.org/server/api/core/bitstreams/6bcccf75-4854-51b5-b9a8-fc1e649b3f98/content#:~:text=it%20was%20roughly%20a%20year%20ago%20that 20the,for%20shared%20prosperity%2C%20which%20combines%20growth%20with%20equality.

World Bank (2022). Lifting 800 Million Out Of Poverty.

World Bank: Accelerating Poverty Reduction in Africa (2019) https://openknowledge.worldbank.org/server/api/core/bitstreams/95605b8c-68cc-59e4-85de-36213325c869/content

World Bank Poverty and Equity Brief. Sub-Saharan Africa April 2020). https://databankfiles.worldbank.org/public/ddpext_download/poverty/33EF03BB-9722-4AE2-ABC7-AA2972D68AFE/Global_POVEQ_SSA.pdf

World Bank (2020): The number of poor people continues to rise in Sub-Saharan Africa, despite a slow decline in the poverty rate
https://blogs.worldbank.org/en/opendata/number-poor-people-continues-rise-sub-saharan-africa-despite-slow-decline-poverty-rate
World Bank: Understanding Poverty (2023) Understanding Poverty (worldbank.org)
World Bank: Poverty and Equity Global Practice (2024)
https://openknowledge.worldbank.org/server/api/core/bitstreams/eb297870-1c63-425d-963a-16254e8ab7eb/content#page=15.72
World Bank Human Capital Country Brief (2023)
https://thedocs.worldbank.org/en/doc/64e578cbeaa522631f08f0cafba8960e-0140062023/related/HCI-AM23-NGA.pdf
World Bank: Country Policy and Institutional Assessment (2023) PEFA 2022 Stocktaking - A11.pdf
World Bank Nigeria Overview (2024)
https://www.worldbank.org/en/country/nigeria
World Bank Metadata Glossary (2025)
https://databank.worldbank.org/metadataglossary/world-development-indicators/series/NY.GDP.PCAP.KD.ZG
Yusuf, A. A., Anna, Z., Komarulzaman, A., & Sumner, A. (2023). *Will economic growth be sufficient to end global poverty? New projections of the UN Sustainable Development Goals* (No. 2023/123). WIDER Working Paper.